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New horizons for broadcast monitors.

BVM-A Series

Broadcast and Professional Monitors
for Evaluation, Critical and Reference Monitoring

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The BVM-A Series of digital monitors — the widest ranging master-grade monitor series

BVM-A Series **Broadcast and Professional Monitors**

Sony is redefining its decades of professional monitor experience with the introduction of a new family of BVM Series monitors. The BVM-A Series of digital monitors, with a number of impressive enhancements, has been designed to surpass the conventional concepts of existing high-grade CRT monitors.

Positioned as a successor to the market-acclaimed Sony BVM-D Series, the BVM-A Series – as an industry first – presents a full and consistent line of master-grade CRT monitors.

The BVM-A Series monitors are offered in three different CRT sizes – the 32-inch[*1] model with 16:9 aspect ratio, and the 20-inch[*2] and 14-inch[*3] models with 4:3 aspect ratios. All three monitors support multi-format input, accepting a range of SD and HD signal formats, with the added capability of dual-link HD-SDI input to monitor top-quality images up to 1080/50i and 1080/60i 4:4:4 RGB[*4].

While inheriting the modular design concept from its predecessor BVM models, a thorough review of its input boards has been conducted. This has resulted in a simplified board lineup that makes input configuration easier while also offering optimised cost-per-input value. All BVM-A Series monitors use the same optional input boards, so they can be effectively shared between monitors when the need arises[*5].

The BVM-A Series also incorporates an all-new Ethernet™–based control system, allowing standard network cables and hubs to be used for easy configuration, high reliability, and high communication speed. And for monitor setup and control, the same logical menu structures and Auto Setup capabilities have been retained from its BVM predecessors, further facilitating system setup.

Designed to meet the critical needs of today and tomorrow, the BVM-A Series is the choice for any high-grade monitoring application in studio production, post-production, telecine and broadcast operations.

*1 29⅝-inch viewable area measured diagonally.
*2 19-inch viewable area measured diagonally.
*3 13⅛-inch viewable area measured diagonally.
*4 with appropriate option cards inserted.
*5 The BVM-A Series input boards are not compatible with other earlier BVM Series monitors.

Top Quality Monitoring

A Full Line of Master-grade Monitors

The BVM-A Series of monitors comprises three models – the 32-inch BVM-A32E1WM*1 and the 20-inch BVM-A20F1M*2 and the 14-inch BVM-A14F5M*3 with a 4:3 aspect ratio. All three monitors have been developed in line with Sony's evaluation-grade monitor standards, providing the high resolution and wide and natural frequency response required for master monitoring applications. This consistent image quality is a significant benefit over conventional monitor product lines, which can offer lower specifications for smaller screen sizes.

*1 29 5/8-inch viewable area measured diagonally.
*2 19-inch viewable area measured diagonally.
*3 13 1/8-inch viewable area measured diagonally.

Flat surface HR Trinitron

To provide the highest possible picture quality, all BVM-A Series monitors are equipped with CRTs manufactured by Sony, using EBU standard phosphors. Flat surface 16:9 aspect HR Trinitron CRTs have been exclusively designed for the BVM-A32E1WM model.

Faithful Colour Reproduction

The BVM-A Series monitors are designed to provide the most accurate phosphor chromaticity, white uniformity, and colour temperature, thereby achieving extremely faithful colour reproduction.

Stable Colour Temperature

The internal beam current feedback circuit equipped on the BVM-A Series monitors maintains a constant colour temperature over a long period of time.

Multi-format Signal Support

With the appropriate input boards installed, all BVM-A Series monitors support a spectrum of SD and HD signals with frequency responses ranging from 15 kHz to 45 kHz (horizontal)/48 Hz to 60 Hz (vertical). Input signals are scanned on the CRT raster at their native frequencies and native line counts, with no scan conversion processes involved.

Dual-link HD-SDI

To be prepared for the fast-paced changes in video production, the BVM-A Series monitors offer dual-link HD-SDI capability, meeting the SMPTE 372M standard. Using two HD-SDI connectors in a pair, the BVM-A Series allows a variety of digital 4:4:4 HD signals to be accepted in both GBR and Y/PB/PR signal formats.

BVM-A Series Acceptable Signal Formats

No	System nomenclature	Samples per active line	Active lines per frame	Frame Rate fV (Hz)	Interface sampling freq (MHz)	Samples per total line	Total lines per frame	Line Frequency fH (kHz)	Standard
1	525/59.94/2:1	720	483	59.94	13.5	858	525	15.734	Rec.ITU-R BT.601
2	625/50/2:1	720	575	50	13.5	864	625	15.625	Rec.ITU-R BT.601
3	525/59.94/1:1	720	483	59.94	27	858	525	31.469	SMPTE 293M / Rec.ITU-R BT.1358
4	625/50/1:1	720	576	50	27	864	625	31.25	Rec.ITU-R BT.1358
5	1920x1080/24PsF	1920	1080	48	74.25	2750	1125	27	SMPTE RP 211
		1920	1080	48/1.001	74.250/1.001	2750	1125	27/1.001	
6*1	1920x1080/50/2:1	1920	1080	50	74.25	2640	1125	28.125	SMPTE 274M
7*2	1920x1080/60/2:1	1920	1080	60	74.25	2200	1125	33.75	SMPTE 274M
		1920	1080	60/1.001	74.250/1.001	2200	1125	33.75/1.001	
8	1920x1035/60/2:1	1920	1035	60	74.25	2200	1125	33.75	SMPTE 240M / BTA S-001B
		1920	1035	60/1.001	74.250/1.001	2200	1125	33.75/1.001	
9	1280x720/60/1:1	1280	720	60	74.25	1650	750	45	SMPTE 296M
		1280	720	60/1.001	74.250/1.001	1650	750	45/1.001	
10	1280x720/50/1:1	1280	720	50	74.25	1980	750	37.5	SMPTE 296M

*1 Also accepts 1920x1080/25PsF signals. *2 Also accept 1920x1080/30PsF signals

Flexible Input Configurations

Modular slot design

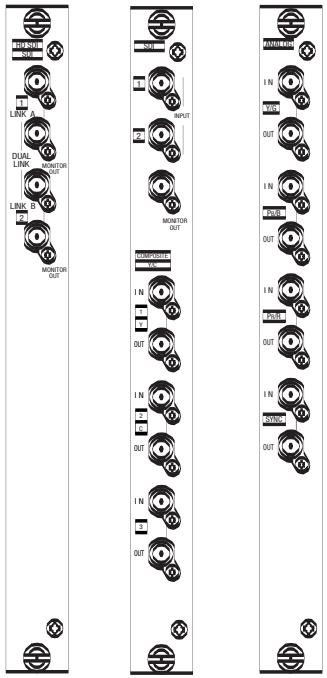
The BVM-A Series uses a modular slot design, so inputs can be configured according to individual needs. Three input board slots are available on all models. Optional input boards can be installed in any board slot, and in any combination. These Option boards utilize only one slot each, so up to three cards can be installed for maximum flexibility.

Logically designed input boards

In developing the BVM-A Series, Sony conducted a thorough review of its optional input boards. The result is a more logical and flexible input capability integrated into three optional boards, allowing easier configuration and better cost-per-input value. This approach also enables all BVM-A Series monitors to share the same boards. The following chart describes the input signal types that each board* accepts.

* The BVM-A Series input boards are not compatible with other earlier BVM Series monitors.

Optional Input Boards



BKM-62HS BKM-61D BKM-68X

Input Signals by board

	System Nomenclator	Signal Format	BKM 62HS	BKM 61D	BKM 68X
Analogue	525/59.94/2:1	Composite, YC (NTSC/PAL-M)		○	
		Y R-Y B-Y / GBR			○
	625/50/2:1	Composite, YC (PAL/SECAM)		○	
		Y R-Y B-Y / GBR			○
	525/59.94/1:1	Y R-Y B-Y / GBR			○
	625/50/1:1	Y R-Y B-Y / GBR			○
	1920x1080/24PsF*3	Y PB PR / GBR			○
	1920x1080/50/2:1, 25PsF*3	Y PB PR / GBR			○
	1920x1080/60/2:1, 30PsF*3	Y PB PR / GBR			○
	1920x1035/60/2:1*3	Y PB PR / GBR			○
	1280x720/60/1:1*3	Y PB PR / GBR			○
	1280x720/50/1:1	Y PB PR / GBR			○
SDI	525/59.94/2:1	Component Digital (D1)	○	○	
		Composite Digital (D2)		○	
	625/50/2:1	Component Digital (D1)	○	○	
		Composite Digital (D2)		○	
HD SDI (10 bit system only)	1920x1080/24PsF*3	4:2:2 Single Link / Y PB PR	○		
		4:4:4 Dual Link / Y PB PR / GBR	○		
	1920x1080/25PsF	4:2:2 Single Link / Y PB PR	○		
		4:4:4 Dual Link / Y PB PR / GBR	○		
	1920x1080/30PsF*3	4:2:2 Single Link / Y PB PR	○		
		4:4:4 Dual Link / Y PB PR / GBR	○		
	1920x1080/50/2:1	4:2:2 Single Link / Y PB PR	○		
		4:4:4 Dual Link / Y PB PR / GBR	○		
	1920x1080/60/2:1*3	4:2:2 Single Link / Y PB PR	○		
		4:4:4 Dual Link / Y PB PR / GBR	○		
	1920x1035/60/2:1*3	4:2:2 Single Link / Y PB PR	○		
	1280x720/60/1:1*3	4:2:2 Single Link / Y PB PR	○		
	1280x720/50/1:1	4:2:2 Single Link / Y PB PR	○		
	Number of Digital Inputs		2*4	2	0
	Number of Analogue Inputs		0	3	1

*3 Also compatible with 1/1.001 frame rates.
*4 The BKM-62HS automatically detects SDI and HD-SDI input signals.

Operational Convenience

New Modular Monitor Control Unit (BKM-15R)

The modular design of the BVM-A Series, in which the monitor and control panel are provided as separate units, allows for greater flexibility in system integration. The BVM-A Series incorporates a new Monitor Control Unit – the BKM-15R – which can be attached below the monitor using the optional attachment kit* or connected remotely via an Ethernet cable.

* The optional BKM-35H Attachment Kit is for the BVM-A20F1M. The BKM-15R does not attach to the BVM-A32E1WM. An attachment kit is not required for the BVM-A14F5M.

Ethernet-based Remote Control*1

A huge benefit of the BVM-A Series is its new Ethernet-based remote control system. The BVM-A Series monitors and BKM-15R*2 Monitor Control Unit are equipped with Ethernet ports, allowing remote control of display parameters across a standard Ethernet connection.

The BVM-A Series Ethernet control system allows the connection of up to 32 nodes of monitors and BKM-15Rs. This means that with one BKM-15R, up to thirty-one monitors can be controlled.

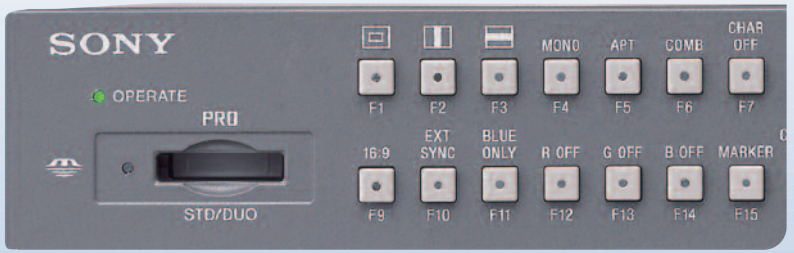
*1 Earlier remote control units (BKM-10R and BKM-11R) are not compatible with the BVM-A Series Ethernet control system.

*2 The BKM-15R is not compatible with earlier BVM Series monitors.

Memory Stick® Media Slot

The optional BKM-15R has a Memory Stick™ slot to save and load monitor setup and adjustment data on Memory Stick media*. In multiple monitor systems, this allows data to be exchanged between units so that the same setup and adjustment status is easily retained.

* Accepts standard-type Memory Stick media only. Memory Stick media with high-speed transfer capability or Magic Gate copyright protection technology cannot be used.



BMK-15R Monitor Control Unit

Remote Maintenance

The BVM-A Series monitors support the SNMP protocol through their Ethernet ports, which allows maintenance information to be monitored. By using compatible remote-maintenance software, it is possible to monitor the display's status as well as upgrade software via a Local Area Network.

- Status (model name, serial number, IP address, software version, etc.)
- Error information
- Upgrade software (ftp)

Marker Settings

The BVM-A Series monitors can display various markers, including an aspect marker, safe area marker, and cente marker.

In addition to this flexible selection of marker types, detailed display settings of each marker are offered. For example, the brightness, horizontal position, and width of aspect markers can all be controlled, while the height and width of safe area markers can also be adjusted. What's more, users can also choose to display the title of the safe area marker, and select its position and size.

These flexible marker controls, together with the choice of many different marker selections, make the BVM-A Series the perfect all-round display device for a variety of shooting scenarios – from SD/HD video acquisition to digital cinematography.

Marker Variation

Aspect Marker	Aspect Mode	16:9, 15:9, 14:9, 13:9, 4:3, 2.39:1, 2.35:1, 1.85:1, 1.77:1, VARIABLE
	Aspect Marker Color	White, Red, Green, Blue, Yellow, Cyan, Magenta
	Aspect Blanking	Black, Gray
Safe Area/ centre Markers	Marker Mode	SHAPE A, SHAPE B, SHAPE C
	Area Size	80%, 88%, 90%, 93%, VARIABLE
	Centre Marker	Short, Long
Safe Title Display		Width, Height, H Position, V Position

4 Marker Examples

Screen Size: 16:9
Aspect Mode: 2.35:1
Aspect Marker Color: White
Marker Bright: 90IRE
Width: THICK
Safe Area: SHAPE A
Area Size: 80%
Centre Marker: Short
Aspect Blanking: Off

Screen Size: 16:9
Aspect Mode: 14:9
Aspect Marker Color: White
Marker Bright: 40IRE
Width: THIN
Safe Area: SHAPE B
Area Size: 80%
Centre Marker: Short
Aspect Blanking: Off
Safe Title: ON

Screen Size: 16:9
Aspect Mode: 13:9
Aspect Marker Color: White
Marker Bright: 40IRE
Width: THICK
Safe Area: SHAPE C
Area Size: 80%
Centre Marker: SHORT
Aspect Blanking: ON, HALF

Screen Size: 16:9
Aspect Mode: 4:3
Aspect Marker Color: Green
Marker Bright: 90IRE
Width: THICK
Safe Area: SHAPE C
Area Size: 80%
Centre Marker: LONG
Aspect Blanking: ON, BLACK

Easy Setup and Adjustment

Auto White Balance

The colour temperature of BVM-A Series monitors can be automatically adjusted by the auto white balance function using the optional Sony BKM-14L* Auto Setup Probe. Probes from other manufacturers, including the Konica Minolta CA100/100 plus, DK-Technologies PM5639,THOMA TF6 and UDT Instruments SLS 9400 can also be used.

* The Sony BKM-14L is required for auto uniformity and landing adjustment. Probes other than the Sony BKM-14L require a cable to connect the colour analyser to the monitor.

Auto Chroma/Phase/Matrix Setup

The BVM-A Series monitors automatically select the most appropriate decode matrix from one of the three matrices (ITU 601, ITU 709, or SMPTE 240M), according to the input signal.
An Auto Chroma/Phase setup function is also provided, which automatically adjusts the monitor's chroma, phase and matrix using external colour bars.

Beam Landing Correction

The BVM-A32E1WM is capable of correcting beam landing shift that may occur as a result of terrestrial magnetic influence. This correction can be made manually*, or automatically with the use of the optional BKM-14L Auto Set-up Probe.

* Beam Landing Correction on the BVM-A20F1M and BVM-A14F5M is performed manually.

Digital Uniformity

With the BVM-A Series monitors, white can be reproduced uniformly on every point of the screen, even in the peripheral area, using the digital uniformity circuit. This adjustment can be made manually or automatically, with the use of the optional BKM-14L Auto Set-up Probe.

Digital Convergence

The BVM-A32E1WM is capable of adjusting the convergence at each point of the screen, even in the peripheral area, through the digital convergence circuit.

"+12dB Chroma Up" Button (BKM-15R)

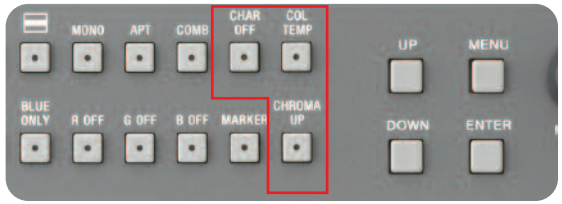
A "CHROMA UP" button located on the BKM-15R front panel allows the Chroma Level to be boosted by +12dB. This is a convenient feature for adjusting camera white balance with a high degree of accuracy.

"Character Off" Button (BKM-15R)

To facilitate parameter adjustments, the On-Screen Menu indication can be taken off the screen, while the Menu mode is still active. The On-Screen Menu indication can be toggled on or off simply by the press of a button on the BKM-15R front panel.

"Colour Temp" Button (BKM-15R)

A Colour Temperature button located on the BKM-15R front panel enables instant access to the manual white balance adjustment mode without using the On-Screen menu.



Chroma Up, Character Off and Colour Temperature buttons

BKM-14L Auto Set-up Probe

Other Features

- Parallel remote control function
- Built-in test signal generator for crosshatch, 100% white signal, 20% gray signal, grayscale, and PLUGE (Picture Line Up Generating Equipment)
- H/V delay function for checking the horizontal and vertical synchronisation signals
- Auto and manual degaussing

Optional Accessories

BKM-15R
Monitor Control Unit

BKM-62HS
HD SDI/SDI
Input Adaptor

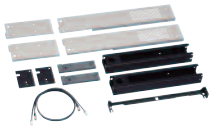
BKM-61D
SDI/Analogue Multi Input
Adaptor

BKM-68X
Analogue Component
Input Adaptor

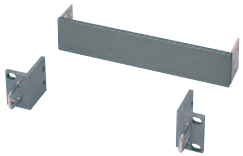
BKM-14L
Auto Set-up Probe

BKM-30E20
19" EIA Standard Rack
Mount Kit
(for BVM-A20F1M
monitors)

BKM-30E14
19" EIA Standard Rack
Mount Kit
(for BVM-A14F5M
monitors)



BKM-35H
Monitor Control Unit
Attachment Kit
(for BKM-15R with 20"
monitors)

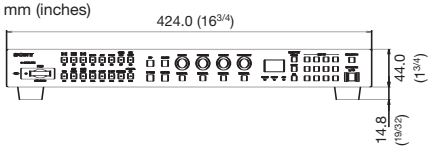


MB-510
19" Rack Mount Kit
(for BKM-15R)

SMF-700
Monitor Interface Cable

BKM-15R Specifications

Unit: mm (inches)



GENERAL	
Power requirements	AC : 100 V to 240 V, 50/60 Hz / DC : 5 V (supplied from Monitor) / AC is prior to DC
Power consumption	11 W (MAX)
Dimensions (W x H x D) (inch)	424.0 X 58.8 X 247.8 (mm) / 16 3/4 X 2 3/8 X 9 7/8
Mass	approx. 2 kg approx. 4 lb 7 oz
Operating temperature	0 to 35 °C Optimum operating range 20 to 30 °C
Storage temperature	-10 to 40 °C
Humidity	30 to 90 % (no condensation)
INPUT/OUTPUT	
LAN	Ethernet (10 BASE-T/100 BASE-TX), RJ-45 x1
DC 5V IN	Circle 4-pin DC Connector (male x1)
OTHERS	
Memory stick slot	Memory Stick/Memory / Stick Duo Compatible

BKM-15R

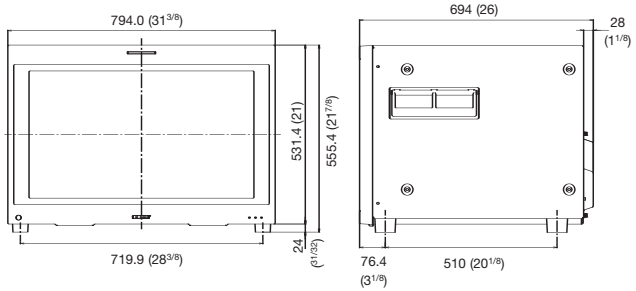
BVM-A32E1WM Specifications

GENERAL		
Signal format		15.625 kHz to 45 kHz (For more details, please refer to the Acceptable Formats table.)
Type		Display unit
Power requirements		100 V to 240 V AC ± 10%, 50/60Hz
Power consumption (with Option board; Max.)		approx. 235 W
Dimensions (W x H x D)		794.0 X 555.4 X 694.0 (mm) / 31 3/8 x 21 7/8 x 26 (inch)
Mass		approx. 96 kg / (211 lb 10 oz)
CRT	CRT type	32-inch HR Trinitron (flat surface, 16:9 aspect)
	AG pitch	0.32~0.36mm, 90 ° deflection, Ø29.1 mm in-line gun
Visual screen (Viewable area, measured diagonally) W x H (Diagonal)		4:3 491.3 x 368.5 mm, (614.1 mm) 4:3 19 3/8 x 14 5/8 inch , (24 1/4 inch) 16:9 655.2 x 368.5 mm, (751.7 mm) 16:9 25 7/8 x 14 5/8 inch , (29 5/8 inch)
Phosphor		SMPTE-C/EBU
INPUT / OUTPUT		
Video		Refer to "Input Signals by board" chart
Control	LAN	Ethernet (10 BASE-T/100 BASE-TX), RJ-45 x1
	Parallel remote	D-sub 9-pin x 1 (Short to ground)
	Option	RS-232C serial interface, Mini DIN 8-pin x 1
VIDEO SIGNAL PERFORMANCE		
Differential gain (DG)		Within 5% for luminance from 0 to 70 cd/m2
Differential phase (DP)		Within 5° for luminance from 0 to 70 cd/m2
Frequency response		48 Hz to 30 MHz +1dB/-3 dB
DC restoration		Back porch type, back porch level: within 1% of peak luminance, 10 to 90% APL
SYNCHRONISATION		
Retrace time	Horizontal	under 3.77 µ sec
	Vertical	under 650 µ sec
RASTER AND PICTURE PERFORMANCE		
Normal scan		5% over scan of the effective picture area
Under scan		3% under scan of the effective picture area
Linearity		Less than 1% within circle centered on the screen with a diameter equal to the vertical height, 2% at any other point*
Colour temperature		D65 / D93 / D56 / USER1-5 (User adjustable)
Convergence		Less than 0.5mm within circle centered on the screen with a diameter equal to the vertical height, 0.8 mm at any other point
Preset brightness		70 cd/m2 (when a 1.0 Vp-p 100% white signal is input)
Stability of raster size		1% of picture height (at 70 cd/áu peak luminescence, 10 to 90 % APL)
Scan delay	Horizontal	Approx. 2/9 line
	Vertical	Approx. 1/2 field
Resolution (Centre)		16:9: 1000 TV lines, 4:3 1000 TV lines
OPERATING CONDITIONS		
Operating temperature		0 to 35 °C, Optimum operating range 20 to 30 °C
Storage temperature		-10 to 40 °C
Humidity		30 to 90 % (no condensation)
OTHERS		
Supplied accessories		AC cable, AC plug holder, Fuse, Operation manual

*1080/60i and 1035/60i only

Dimensions

Unit: mm (inches)



BVM-A20F1M Specifications

GENERAL		
Signal format		15.625 kHz to 45 kHz (For more details, please refer to the Acceptable Formats table.)
Type		Display unit
Power requirements		100 V to 240 V AC ± 10%, 50/60Hz
Power consumption (with Option board; Max.)		200 W
Dimensions (W x H x D)		444 X 414 X 570 (mm) / 17 ⅜ x 16 ⅜ x 22 ½ (inch)
Mass		approx. 40 kg / (88 lb 3 oz)
CRT	CRT type	20-inch HR Trinitron
	AG pitch	0.30 mm, 90 ° deflection, Ø30.6 mm in-line gun
Visual screen (Viewable area, measured diagonally) W x H (Diagonal)		4:3 386 x 291 mm, (482 mm) 4:3 15 ¼ x 11 ½ inch , (19 inch) 16:9 386 x 218 mm, (443 mm) 16:9 15 ¼ x 8 ⅝ inch , (17 ½ inch)
Phosphor		SMPTE-C/EBU
INPUT / OUTPUT		
Video		Refer to "Input Signals by board" chart
Control	LAN	Ethernet (10 BASE-T/100 BASE-TX), RJ-45 x1
	Parallel remote	D-sub 9-pin x 1 (Short to ground)
	Option	RS-232C serial interface, Mini DIN 8-pin x1
DC 5V IN		Circle 4-pin DC Connector (female x1)
VIDEO SIGNAL PERFORMANCE		
Differential gain (DG)		Within 5% for luminance from 0 to 100 cd/m²
Differential phase (DP)		Within 5° for luminance from 0 to 100 cd/m²
Frequency response		48 Hz to 30 MHz +1dB/-3 dB
DC restoration		Back porch type, back porch level: within 1% of peak luminance, 10 to 90% APL
SYNCHRONISATION		
Retrace time	Horizontal	under 3.77 µ sec
	Vertical	under 650 µ sec
RASTER AND PICTURE PERFORMANCE		
Normal scan		5% over scan of the effective picture area
Under scan		3% under scan of the effective picture area
Linearity		Less than 0.5% within circle centered on the screen with a diameter equal to the vertical height, 1% at any other point
Colour temperature		D65 / D93 / D61 / USER1-5 (User adjustable)
Convergence		Less than 0.4mm within circle centered on the screen with a diameter equal to the vertical height, 0.7 mm at any other point
Preset brightness		100 cd/m² (when a 1.0 Vp-p 100% white signal is input)
Stability of raster size		1% of picture height (at 100 cd/m² peak luminescence, 10 to 90% APL)
Scan delay	Horizontal	Approx. 2/9 line
	Vertical	Approx. 1/2 field
Resolution (Centre)		16:9: 700 TV lines, 4:3 900 TV lines
OPERATING CONDITIONS		
Operating temperature		0 to 35 °C, Optimum operating range 20 to 30 °C
Storage temperature		-10 to 40 °C
Humidity		30 to 90 % (no condensation)
OTHERS		
Supplied accessories		4:3 mask, Fuse, AC cable, AC plug holder, Tally label, Operation manual

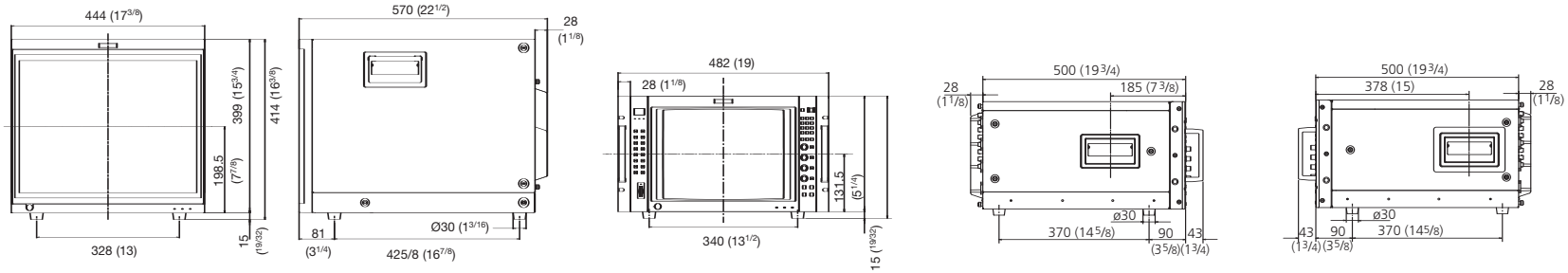
BVM-A14F5M Specifications

GENERAL		
Signal format		15.625 kHz to 45 kHz (For more details, please refer to the Acceptable Formats table.)
Type		Stand-alone monitor
Power requirements		100 V to 240 V AC ± 10%, 50/60Hz
Power consumption (with Option board; Max.)		170 W (Max.)
Dimensions (W x H x D)		482 X 280 X 571 (mm) / 19 x 11 ⅛ x 22 ½ (inch)
Mass		approx. 26 kg / (57 lb 5 oz)
CRT	CRT type	14-inch HR Trinitron
	AG pitch	0.25 mm, 90 ° deflection, Ø29.4 mm in-line gun
	Visual screen (Viewable area, measured diagonally) W x H (Diagonal)	4:3 267.5 x 200.6 mm, (331.6 mm) 4:3 10 ⅝ x 8 inch , (13 1/8 inch) 16:9 267.5 x 150.5 mm, (306.9 mm) 16:9 10 5/8 x 6 inch , (12 ⅛ inch)
Phosphor		SMPTE-C/EBU
INPUT / OUTPUT		
Video		Refer to "Input Signals by board" chart
Control	LAN	Ethernet (10 BASE-T/100 BASE-TX), RJ-45 x1
	Parallel remote	D-sub 9-pin x 1 (Short to ground)
	Option	RS-232C serial interface, Mini DIN 8-pin x 1
VIDEO SIGNAL PERFORMANCE		
Differential gain (DG)		Within 5% for luminance from 0 to 70 cd/m²
Differential phase (DP)		Within 5° for luminance from 0 to 70 cd/m²
Frequency response		48 Hz to 30 MHz +1dB/-3 dB
DC restoration		Back porch type, back porch level: within 1% of peak luminance, 10 to 90% APL
SYNCHRONISATION		
Retrace time	Horizontal	under 3.77 µ sec
	Vertical	under 650 µ sec
RASTER AND PICTURE PERFORMANCE		
Normal scan		5% over scan of the effective picture area
Under scan		3% under scan of the effective picture area
Linearity		Less than 0.5% within circle centered on the screen with a diameter equal to the vertical height, 1% at any other point
Colour temperature		D65 / D93 / D61 / USER1-5 (User adjustable)
Convergence		Less than 0.4 mm within circle centered on the screen with a diameter equal to the vertical height, 0.7 mm at any other point
Preset brightness		100 cd/m² (when a 1.0 Vp-p 100% white signal is input)
Stability of raster size		1% of picture height (at 100 cd/m² peak luminescence, 10 to 90 % APL)
Scan delay	Horizontal	Approx. 2/9 line
	Vertical	Approx. 1/2 field
Resolution (Centre)		16:9: 600 TV lines, 4:3 800 TV lines
OPERATING CONDITIONS		
Operating temperature		0 to 35 °C, Optimum operating range 20 to 30 °C
Storage temperature		-10 to 40 °C
Humidity		30 to 90 % (no condensation)
OTHERS		
Supplied accessories		4:3 mask, Fuse, AC cable, AC plug holder, Tally label, Operation manual

BVM-A32E1WM

BVM-A20F1M

BVM-A14F5M



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